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THE MOSAIC LAW AND THE CODE HAMMURABI.

To the Editor of The Monist:

In the April number of *The Monist,* 1905, page 200, my Hammurabi theory is alleged to maintain that both the codes of Palestine (viz. the Mosaic law) and Babylon have been derived through "a regular development of certain principles of primitive Semitic social life."

This is a mistake, and obviously Dr. Godbey, the author of the mooted article, confuses what I say concerning the *Urgesetz* and the *Ursemitisch.* By the latter is meant primitive Semitic life; by the former, which I have also called "archetype," I understand (as careful reading of my book will show) a definite Babylonian law antedating Hammurabi.

Accordingly, the objections made by Dr. Godbey are irrelevant, for it was my very purpose to prove that

1. A close connection exists between the Mosaic law and the Code Hammurabi;
2. The Mosaic law has not been derived from the Code Hammurabi; and
3. Both have been derived from an "archetype," i. e., a more ancient Babylonian law.

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IN THE BEGINNING.

"In the beginning God created the heaven and the earth." Thus opens Genesis, with a statement that has since remained a problem. The general interpretation of it is that the universe, as we know it, came into being at some fixed period in eternity. To this science has added the conception that it has since gone through a long process of evolution, is now running down like a clock whose spring is weakening, and is destined to lose its vitality at some fixed future period.

Such is the dictum of Scripture and of science. Can we accept it? It must be said that the mind of man revolts against it, rendering the involuntary verdict that time had no beginning and can have no end. Before "the beginning" what? is an inevitable question. After "the end" what? is as inevitably asked. Did God exist from eternity alone and call matter into being from absolute nothingness? Will God exist through a later eternity alone, in company with the dark and dead spheres of the universe? Man's reason enters a strong protest against any such dogma. From the dawn of civilization we hear this protest, in the doctrine of the old Brahmanic philosophers, who maintained that matter and spirit are co-eternal and one in essence, that a self-conscious Deity infiltrates and controls matter, and that the conscious spirit of man is but an atom temporarily set aside from the infinite consciousness of the Deity, into which it is destined to return.

So far inspiration and philosophy take us. But in modern times many have ceased to put faith in either inspiration or philosophy, accepting facts only, and taking refuge in the cave of the Agnostic from those vast problems which sweep beyond the reach of human thought. This is, perhaps, a somewhat barren attitude. In the absence of facts bearing upon these questions it is difficult—impossible, it may be—to escape from speculative dreams and problematical theories, and science is as great a sinner in this direction as theology. But in regard to the problem of "the beginning" we may justly ask, what do facts teach? Is there anything known to man that will aid in its solution? Yes, let us answer. There are facts of astronomy known at the present day which seem quite out of consonance with the old doctrine, and teach us that, instead of one definite beginning, there have been countless beginnings in the evolution of the universe, some dating back myriads of years, some of comparatively recent origin, some still in the throes of birth, some whose germs alone as yet exist. And if so with the beginning, it may be so with the ending. The end of spheral evolution may have been reached in many instances. In others it is still myriads of years in the future. As to whether each of these endings will prove the germinal point in a new beginning is a matter far beyond our ken.

As for the facts bearing upon the case, they are numerous and significant. When we look upward upon the vast array of suns which stud by millions the nightly skies, what do we behold? Not a multitude of spheres of the same apparent age, as we might expect under the prevailing hypothesis, but an innumerable series of solar orbs of every age and stage of growth. As we look downward on our own race, we perceive the new-born infant, the child, the youth, the mature man, the man of middle age, the old in whom the seeds of death are sown, and finally the lifeless corpse. As we look upward into the star-studded heavens we behold something strikingly analogous. Spheres lie there in every stage of growth, from early infancy to decrepid age, if such a parallel is admissible. The host of stars that stud the skies may well seem to our uninstructed eyes of the same age and condition. But the telescope tells a different tale, and the revelations of spectrum analysis have taught us remarkable lessons about those distant spheres. As regards the light-giving suns, those which, like our own solar orb, are probably the ruling centers of families of planets, there are evidently very great differences in age. Father Secchi, the noted priest-astronomer, forty years ago divided them, on the basis of their spectra, into four types: (1) The white stars, like Sirius and Vega, held to be young and intensely hot; (2) The yellow stars, like Aldebaran and our own Sun, of mature age and diminishing heat; (3) The red stars, with spectra presenting fluted bars, fainter towards the violet end,—in these old age is fast coming on; (4) The faint, deep-red stars, with wider fluted bars and spectra fading towards the red end,—the light of these is supposed to be near extinction. Secchi's views, a revelation when made public in 1865, have since been generally accepted by astronomers, who now hold that the light-giving stars of the heavens differ immensely in age, some being millions, perhaps billions, of years older than others. It is true that certain changes have been suggested in Secchi's types. Type 3, for instance, is placed by Lockyer at the beginning of the series. But the general fact involved in them is undoubted by astronomers.

Yet this is only a starting-point. Since Secchi's time astronomy has made many steps of advance. We now see far before and after. The youngest sun known to us is already far advanced in its life career. We are familiar with much younger forms. The oldest light-giver has a long course yet to run, veterans being known of far greater age. We are aware of the existence of dark suns, orbs that have long lost their light and sunk into blind old age. We are similarly aware of the existence of embryo suns, in many stages of development. The story of the stars spreads before us in remarkable completeness, and we see the tenants of the heavens in every stage of existence, from infancy to dotage.

Let us begin with the stage of solar childhood. Nebulæ, the germinal stuff of stars, are now known in great numbers. Thousands of them exist, of all sizes and many shapes. They are visible in the telescope from the vague wisp of nebulous matter to the sphere whose recent origin is shown by the faint nebulous cloud still clinging around it. Between these extremes are varied phases of development, which are classed as annular, elliptic, spiral, and planetary nebulæ and nebulous stars. The tendency to assume the spiral form is strongly marked among them, and we see this in what seem various stages of condensation. The planetary nebulæ show faint disks, as of solar orbs gradually forming out of the original fire mist. The nebulous stars are the final stage of star birth, in which a trace of the nebula remains, the condensation not being quite complete. Such is, very briefly told, the story of star generation, so far as we are familiar with it. The details of this story, as now known to astronomers, give excellent warrant for the general belief that the nebula is the mother form of the star and that in its varied forms we have set out before us the genesis of the suns.

Passing now to the later stages of the process of solar evolution, we move onward through the various types of stellar progress to the faint and fading dark-red sphere, and thence to the dark star, the burnt-out sun, the solar globe whose light was extinguished long ages ago. How many of these exist in the skies we do not and can not know. That we know of their existence at all is a remarkable example of the magic of science. That astronomers should have been able to discover orbs of darkness in the heavens, trillions of miles distant from us, seems incredible, yet they are to-day quite as convinced of the existence of these lightless stars as of our sun itself. Their discovery forms an interesting chapter in modern science. We must speak of it with great brevity, yet perhaps can make its method evident in a few words.

The peculiar variations in the motions of the bright stars Sirius and Procyon gave rise, more than half a century ago, to the theory that these changes, periodical in character, were due to the presence of dark companions. It was held that Sirius, for instance, was accompanied by a dark orb—a planet, let us say, of monstrous size,— and that the two revolved round each other. Sirius alone could be seen, but the strange fluctuations in its motions seemed to point to a sister orb near by, by which it was pulled out of place. This theory was received at first with much incredulity. Fortunately, in 1862, by the use of a new and powerful telescope, the companion star was discovered. It was not quite dark, it yielded light enough to reveal itself, though its brilliance was ten magnitudes less than that of Sirius. In mass Sirius was twice the larger, a fact discoverable by the strength of their mutual attractions. By great good fortune the dark companion of Procyon was similarly found, at a later date. In 1896, when the powerful lens of the Lick Observatory was turned upon this star, its companion became visible, a light-giver indeed, but twelve magnitudes in visibility below Procyon.

These discoveries, we have said, were fortunate. They demonstrated the truth of the theory in these two instances and thus gave warrant for its application in many other similar instances, where the dark companion continued obstinately invisible. There are many variable stars, several hundreds of them being now known, in which the light fluctuates at fixed intervals, declining in intensity for a period of greater or less length, then regaining its full strength. An explanation of this is that a dark companion revolves around the visible star, cutting off part of its light when passing between it and our eyes. Periodical fluctuations in the motion of these stars go to show that this explanation is the correct one. The bright star Algol, for instance, is known to have such a dark companion, which at once affects its motion and its light. It does not cut off all the light, and therefore seems to be of smaller size, but its influence on the motions of Algol proves it to have twice the mass of the latter, and in consequence to be much more dense and compact. It may be said further that most of the variable stars—but not all—have spectra of the fourth type, showing that their light is approaching extinction.

As in the cases of Sirius and Procyon, all of these dark companion stars may be light-givers to some extent, but rarely sufficiently so to be detected by the telescopic power at our command. There is another matter here calling for comment. The companions seem of very different age. There are two possible explanations of this. Either their constitution differs, so that one has lost its light-giving powers more rapidly than the other, or they were originally separate tenants of the skies, and became companions as a result of approach and mutual attraction.

We have no means of discovering the existence of dark stars except those given, and can never hope to detect them unless they are companions of light-givers. Thus our powers in this direction are restricted to a very small percentage of the whole multitude of stars, and though we may with some justice conjecture that there are myriads of independent stars of this character, we cannot demonstrate this. Yet we have a reason for believing in it other than the known existence of many dark stars. This is the fact that the visible stars show successive stages of development, from the brilliant white globe to the dark red orb whose light seems fading out. It seems safe to conclude that this process continues till the stage of invisibility is reached, and we may even conjecture that it goes on in many cases till the star has lost its heat as well as its light and has reached the end of its career as a vital tenant of the skies.

To return now to the title of this paper, "In the Beginning," we are justified in asking: When was that beginning? Have not the actual beginnings been countless in number, as many as there are independent stars in the skies? The heavens seem to tell the story of multitudinous beginnings and endings, births dating back to almost infinite periods in the past and births now taking place before our eyes; while between them lies every stage of development from infancy to old age and death. The "beginning" taught by Scripture can apply to our solar system only, the sun and his family of planetary bodies. It evidently has no application to the universe as a whole.

Such appears to be the inevitable conclusion so far as our knowledge of facts leads us onward. Yet we may have some justification in taking one step into the kingdom of speculation. Two chapters are missing from our volume, the one that precedes the faintly visible nebula, the one that follows the traceable dark star. In the one case we are in the presence of an early stage of life; in the other in that of a stage far advanced towards death. What went before and what comes after? Is it not possible that the beginning and the end may shade together and death be the herald of a new life? May not the dead sun, through some process of disaggregation of which we know and can know nothing, break up into its primal elements, dissolve to form a new nebula, and thus return to the stage of "The beginning," ready to set out again on a new career of evolution?

This is conjectural; no one can say that it is impossible; for, in spite of the theory of the irreversible dissipation of energy, we remain blankly ignorant of the forces of aggregation and disaggregation which may exist in the universe, and are incapable of placing a limit to its possibilities of change. If, for the sake of the argument, it be granted that such a reversal in the action of forces may be possible, it opens to us a wonderful vista into the process of creation and eternity. In a universe in which the old starts out again, by a natural evolution, as the new, there could be no beginning and no end. Every sphere would run its separate course for myriads of years, and then give birth to a new sphere, again to run a course of vast duration, and eternity would be a process of births and deaths unceasing, with all the wondrous panorama of spheral life stretched out between.

This view may be looked upon by many as heterodox, and as out of consonance with the dogmas of orthodox science. But the facts stand before us, and the strictest orthodoxy cannot set them aside. The universe is not a realm of one beginning and one ending, but may have had almost as many beginnings as there are separate stars, many of the tenants of space being myriads of ages older than others. Whence do the new nebulæ come unless there is material provided for them? And whence does this material arise? Is it matter newly created for the purpose or old matter transformed and fitted to run its evolutionary race again? Modern science is very unlikely to accept the former view, but if it accepts the latter we are led to the inevitable conclusion that the processes of the universe are continual, not transitory, and that spheral evolution may well be a process eternal in duration,—without beginning and without end.

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